

SUPPORT FOR THE AMENDMENT

Support for the amendment to claim 1 is found in claim 4 as originally presented. No new matter would be added to this application by entry of this amendment. No new issues would be raised by entry of applicants' amendment as applicants have merely introduced the limitations from an existing dependent claim, into the independent claim. Entry of applicants' amendment and full consideration thereof at this stage of prosecution is respectfully requested.

Upon entry of this amendment, claims 1-3, 6-11, 14-16 and 19-21 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a foamed oil-in-water type emulsion comprising 7-35 wt.% of an oil phase comprising 30-90 wt. % of diglycerides, 65-93 wt. % of a water phase containing 15-60 wt. % of sugars and/or sugar esters, having a specific gravity of 0.1-0.9 g/cm³ and a volume-average particle diameter of 0.9 μ m or less.

Foamed oil-in-water type emulsions are commonly found as food compositions. Diglyceride containing compositions have received interest in view of disclosed beneficial health effects. Incorporation of diglyceride compositions into foamed oil-in-water type emulsions such as ice cream coatings and frozen sweets is desired. However, good foaming characteristics have not always been observed. Diglyceride compositions having good foaming characteristics and foam shape keeping ability have been reported by the combination of a liquid diglyceride and hydrogenated oil (JP 63-301765) (see pg 2, lines 1-4 of applicants' specification). However, hydrogenated oils, having been used as foaming fat or oil, carry the detriments of high saturated fatty acid and high trans acid contents (pg 2, lines 6-8 of applicants' specification). Accordingly, a diglyceride containing foamed oil-in-

water type emulsion having good foaming properties and a low saturated fatty acid content is sought.

The claimed invention addresses this problem by providing a foamed oil-in-water type emulsion comprising an 7-35 wt.% of an oil phase comprising 30-90 wt.% of diglycerides which comprises at least 80 wt. % of unsaturated fatty acids and 0 to 20 wt. % of saturated fatty acids and 65 to 93 wt. % of a water phase comprising 15 to 60 wt.% of a sugar and/or sugar alcohol, the emulsion having a specific gravity of from 0.1-0.9 g/cm³ and a **volume-average particle diameter of 0.9 μ m or less**. Applicants have discovered that such a volume-average particle diameter maximum advantageously provides for foamed oil-in-water emulsions with an excellent sweet taste. Such a foamed emulsion is nowhere disclosed or suggested in the cited prior art of record.

The rejections of claims 1-4 and 6-11, 14-16 and 19-22 under 35 U.S.C. § 103(a) over Nomura et al. EP 402,090 alone and in view of Ono, U.S. 5,962,058 and Lichtenstein et al. are respectfully traversed.

None of the cited prior art of record discloses or suggests a foamed oil-in-water type emulsion of 7 to 35 wt. % of oil phase and 65 to 93 wt. % water phase comprising 15-60 wt. % of sugars having a volume-average particle diameter of 0.9 μ m or less.

Nomura et al. describes an edible oil-in-water emulsion comprising a diglyceride mixture having an increasing melting point of 20°C or below (pg 2, lines 31-34). There is no discussion of having a volume-average particle diameter of 0.9 μ m or less.

Examples 10-12 describe foamed compositions containing a sugar in the aqueous phase. However, none of these examples suggest a composition containing 65-93 wt. % of an aqueous phase containing 15-60 wt. % of sugars and/or sugar esters having a volume-average particle diameter of 0.9 μ m or less.

In contrast, the claimed invention is directed to a foamed oil-in-water type emulsion comprising 7-35 wt.% of an oil phase, 65-93 wt. % of a water phase containing 15-60 wt. % of sugars and/or sugar esters having a volume-average particle diameter of 0.9 μm or less. Applicants note, the claims have been amended to recite having a volume-average particle diameter of 0.9 μm or less.

As evidence of an improvement in sweet-taste quality by selection of a volume-average particle diameter of 0.9 μm or less, the examiner's attention is directed to the data appearing in table 4, page 30 of applicants' specification. The data provides an assessment of the aqueous and sweet tastes as well as the taste after preservation for foamed composition within an outside the claimed volume-average particle size. For the examiner's convenience the data from Table 4 is reproduced below:

| | Example 1 | Example 2 | Example 3 | Example 4 | Comparative Example 1 |
|---|-----------|-----------|-----------|-----------|-----------------------|
| Average particle diameter of the oil-in-water type emulsion (μm) | 0.47 | 0.43 | 0.48 | 2.35 | 0.41 |
| Specific gravity of the foamed product (g/cm^3) | 0.44 | 0.52 | 0.45 | 0.63 | 0.57 |
| Aqueous taste | A | B | A | B | B |
| Sweet taste | B | B | B | C | D |
| Taste after preservation | A | A | B | A | B |

Example 4, a composition otherwise identical to Example 1 but having an average particle diameter of 2.35 μm was evaluated for sweet taste as "slightly heavy, but not good." In contrast, example 1, having a particle size of only 0.47 μm , was evaluates as "not heavy but excellent." Thus, my mere selection of a particle size of 0.9 μm , applicants are able to realize an improvement in the sweet taste of a foamed oil-in-water type emulsion. As Nomura et al. fails to identify a volume-average particle size, the reference can not suggest an improved sweet taste evaluation by selection of such a particle size and accordingly the claimed invention is not rendered obvious by this reference.

The secondary references do not cure the basic deficiencies of the primary reference.

Ono et al. fail to describe a volume-average particle size of 0.9 μm or less. The reference has no disclosure as to particle size and accordingly can not suggest an improved sweetness by selection of particle size.

Lichtenstein et al. has merely been cited to describe the preference of the cis form of fatty acids as compared with the trans form based on the disclosed effect on the serum lipoprotein cholesterol level. However, this reference fails to disclose or suggest a volume average particle size of 0.9 μm or less.

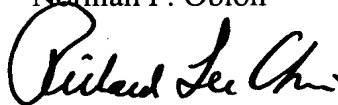
As the cited combination of references do not suggest a foamed oil-in-water type emulsion comprising 7-35 wt.% of an oil phase and 65-93 wt. % of a water phase containing 15-60 wt. % of sugars and/or sugar esters having a volume-average particle size of 0.9 μm or less, the claimed invention is clearly not disclosed or suggested by the cited references. Accordingly, withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

The rejection of claim 22 under 35 U.S.C. § 112, second paragraph is believed to be moot as claims 22 has been canceled without prejudice to prosecution of claim 22 is a continuation application.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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